Important Advances in Clinical Medicine

Epitomes of Progress—Ophthalmology

The Scientific Board of the California Medical Association presents the following inventory of items of progress in Ophthalmology. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist the busy practitioner, student, research worker or scholar to stay abreast of these items of progress in Ophthalmology which have recently achieved a substantial degree of authoritative acceptance, whether in his own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Ophthalmology of the California Medical Association and the summaries were prepared under its direction.

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Ophthalmoscopic Observation of Retinal Nerve Fiber Layer Damage

DISEASES OF THE retina, optic disc, optic nerve and other portions of the anterior visual pathways can be expected to produce direct or retrograde changes in the nerve fiber layer of the retina. Fortunately, this innermost retinal layer is easily accessible to the examining light of the ophthalmoscope. Recent studies have shown the feasibility and clinical value of direct visualization of alterations in the retina nerve fiber layer. Especially when red-free light is used, the details of the nerve fiber layer are readily seen and, with some practice, their alterations in pathological states can be evaluated by everyone who uses an ophthalmoscope. Therefore, careful scrutiny of the nerve fiber layer both in white and red-free light should become an integral part of the normal ophthalmoscopic evaluation of the fundus.

The technique of fundoscopy of the retinal nerve fiber layer involves sharpening one's clinical perceptions to the point where the striated appearance of the nerve fiber layer becomes easily visible. Both white light and red-free ophthalmoscopic evaluation should be used routinely for all patients, and in particular, for those patients in whom there is any question of pathological involvement of the anterior visual pathway. Factors which aid in the observation of the nerve fiber layer are a well dilated pupil, a deeply pigmented choroid and a direct ophthalmoscope with a red-free filter and *bright* source of illumination. Obviously, the media must be quite clear and it helps if a patient is young or otherwise endowed with a thick nerve fiber layer. The fine parallel striations which compose the appearance of the normal nerve fiber layer are most apparent in the immediate peripapillary region, particularly in the arcuate bundles close to the vascular arcades and, especially, along the temporal vascular arcades. These fine striations are most difficult to see in the nasal hemiretina and the much smaller nerve fibers of the papillomacular bundle are easily identified only in the optimum cases.

Patterns of Nerve Fiber Layer Damage. There